8 Spreadsheets

Absolute Referencing

- An absolute reference is a cell reference that will not change when a formula is replicated.
- All or parts of a cell reference can be made absolute by adding $ sign in front of the part to 'fix' in place.

Relative Referencing

- A relative reference is a cell reference that will change when a formula is replicated

37 **9626/11/O/N/21/Q10**

The spreadsheet below shows the estimated number of visitors to the different countries in the United Kingdom. The figures shown relate to the months of July and August 2019. The formulae used in column D, to add up the number of visitors to each country, are also shown.

	A	B	C	D	E	F	G	H
1				UK Tourism Figures				
2								
3	Country	CCode1		Total number of visitors (millions)		Date	CCode2	Number of visitors (millions)
4	England	En		10.56		July 2019	NI	0.53
5	Northern Ireland	NI		1.14		July 2019	En	5.10
6	Scotland	Sc		1.25		July 2019	Sc	0.62
7	Wales	Wa		0.81		July 2019	Wa	0.43
8						August 2019	En	5.46
9						August 2019	NI	0.61
10						August 2019	Sc	0.63
11						August 2019	Wa	0.38

Spreadsheet

D
UK Tourism Figures
Total number of visitors (millions)
=SUMIF($G$4:$G$11,B4,$H$4:$H$11)
=SUMIF($G$4:$G$11,B5,$H$4:$H$11)
=SUMIF($G$4:$G$11,B6,$H$4:$H$11)
=SUMIF($G$4:$G$11,B7,$H$4:$H$11)

Column D Formulae

(a) Using this spreadsheet as an example, explain, in detail, what is meant by absolute and relative cell referencing and explain why both are used.

10(a)	**Eight** from: Absolute referencing is used by including a $ sign within a cell reference/range Absolute referencing is required when cell references/data/values need(s) to remain constant/stay the same/unchanged/locked after replication If absolute referencing is used cell references/data/values that should increment will not increment Relative referencing is when there are just letters and numbers in a cell reference/range If relative referencing were used, cell references/data/values that should remain constant/unchanged will change/increment SUMIF function consists of a range, the criterion and the sum_range When the formula in D4 is replicated the values in the range/CCode2/G$4:G$11 must remain constant in the cells below When the formula in D4 is replicated the values in the criterion/B4 must change in the cells below/to B5 When the formula in D4 is replicated the values in the sum_range/number of visitors must remain constant in the cells below If relative referencing were used for the range G4:G11 the formula in cell D5 would use the range G5:G12 … … NI (B5) is the fifth element of the range G5:G12 and so the formula sums the fifth element of the range H4:H11 which is actually the value for En If absolute referencing was used for the criterion (B4), the only totals that would be printed would be those for En as B4 doesn't change/no other country would be looked for If relative referencing were used for the sum_range H4:H11, the formula in cell D5 would use the sum_range H5:H12 The first value for NI is in H4 so it would not add 0.53 (the value in H4) and only give the total 0.61	**8**